University of Tripoli
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HTML5 BASICS (1)

Introduction to Internet Programming
ITGS 226 -- S2022

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WHAT IS HTML?

- HTML stands for HyperText Markup Language.

- HTML is for creating Web pages

- HTML describes the structure of a Web page

- HTML consists of a series of elements

- HTML elements tell the browser how to display the content

- HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.
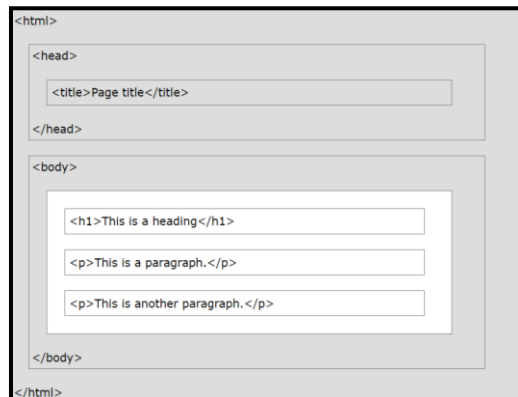
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WHAT CAN DO WITH HTML

- Publish documents online with text, images, lists, tables, etc.
- Access web resources such as images, videos or other HTML document via hyperlinks.
- Create forms to collect user inputs like name, e-mail address, comments, etc.
- Include images, videos, sound clips, flash movies, applications and other HTML documents directly inside an HTML document.
- Create offline version of the website that work without internet.
- Store data in the user's web browser and access later on.
- Find the current location of the website's visitor.

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HTML PAGE STRUCTURE

```html
<html>
    <head>
        <title>Page title</title>
    </head>
    <body>
        <h1>This is a heading</h1>
        <p>This is a paragraph.</p>
        <p>This is another paragraph.</p>
    </body>
</html>
```

- The content inside the <body> section will be displayed in a browser.
- The content inside the <title> element will be shown in the browser's title bar or in the page's tab.

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HTML ELEMENT SYNTAX

- HTML element is the collection of:
  - Start tag
  - Its attributes
  - End tag
  - And everything in between (content).

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EMPTY HTML ELEMENTS

- Empty elements (also called self-closing or void elements) are not container tags (means <hr> *some content* </hr> or
 some content </br> can not be written).

- A typical example of an empty element, is the <br> element, which represents a line break. Some other common empty elements are <img>, <input>, <link>, <meta>, <hr>, etc.

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NESTING HTML ELEMENTS

- Placing one element inside another is called **NESTING**.
- A nested element, also called a child element, can be a parent element too if other elements are nested within it.
- Most HTML elements can contain any number of further elements (except empty elements), which are, in turn, made up of tags, attributes, and content or other elements.
- HTML tags should be nested in correct order. They must be closed in the inverse order of how they are defined, that means <u>the last tag opened must be closed first</u>.

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HTML DOCTYPES

- A Document Type Declaration (DTD).
- (DOCTYPE) for short
- Instruction to the web browser about what version of the markup language the page is written in.
- The World Wide Web Consortium (W3C) provides DTDs for all HTML versions.
- It appears at the top of a web page before all other elements.
- It is not an HTML tag.
- The DOCTYPE for HTML5 is very short, concise, and case-insensitive:

```
<!DOCTYPE html>
```

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THE HTML HEAD ELEMENT

- The container for all the head elements, which provide extra information about the document, or reference to other resources that are required for the document to display or behave correctly in a web browser. Elements such as <title>, <base>, <link>, <style>, <meta>, <script> and the <noscript> element.

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THE HTML TITLE ELEMENT

- Required to produce a valid document.
- Only one title and within the <head> element.
- Plain text; not contain other markup tags.
- It may be used for different purposes:
  - To display a title in the browser title bar and in the task bar.
  - To provide a title for the page when it is added to favorites or bookmarked.
  - To displays a title for the page in search-engine results.
- A good title should be short and specific to the document's content.

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THE HTML BASE ELEMENT

- Define a base URL for all relative links contained in the document.

- It must appear before any element that refers to an external resource. HTML permits only one base element for each document.

```
<head>
    <meta ….>
    <title> …..</title>
    <base href="https://www.example.com/">
</head>
```

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THE HTML LINK ELEMENT

- Defines the relationship between the current document and an external documents or resources.

- A common use of link element is to link to external style sheets.

- An HTML document's <head> element may contain any number of <link> elements.

- The <link> element has attributes, but no contents.

```
<head>
    <title>Linking Style Sheets</title>
    <link rel="stylesheet" href="style.css">
</head>
```

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THE HTML META ELEMENT

- Metadata is a set of data that describes and gives information about other data.

```
<head>
    <title> ……… </title>
    <meta charset="utf-8">
    <meta name="author" content="John Smith">
    <meta name="description" content="Understand tutorials...">
</head>
```

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THE HTML STYLE ELEMENT

- Define embedded style information for an HTML document.
- An embedded style sheet should be used when a single document has a unique style. If the same style sheet is used in multiple documents, then an external style sheet would be more appropriate.

```
<head>
    <title> ……… </title>
    <meta charset="utf-8">
    <style>
        body { background-color: Yellow; }
        h1 { color: red; }
        p { color: green; }
    </style>
</head>
```

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THE HTML SCRIPT ELEMENT

- Define client-side script, such as JavaScript in HTML documents.

```
<head>
  <title> …… </title>
  <script>
     document.write("<h1>Hello World!</h1>")
  </script>
</head>
```

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CASE-INSENSITIVITY

- HTML, tag and attribute names are case-insensitive (but most attribute values are case-sensitive).

- This means the tag <P>, and the tag <p> defines the same thing in HTML which is a paragraph.

- It is recommended using lowercase for tag and attributing names in HTML, since by doing this, document becomes more compliant for future upgrades.

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WRITING COMMENTS

- Comments are usually added with the purpose of making the source code easier to understand or for debugging purpose.
- Comments are not displayed in the browser.
- An HTML comment begins with <!-- and ends with -->

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HTML ELEMENTS TYPES

- Elements can be placed in two distinct groups:
  - **BLOCK LEVEL ELEMENTS:** make up the document's structure. occupies 100% of the available width and it is rendered with a line break before and after. Block level elements such as <div>, <p>, <h1> through <h6>, <form>, <ol>, <ul>, <li>, and so on.
  - **INLINE LEVEL ELEMENTS:** dress up the contents of a block. take up only as much space as it needs. <img>, <a>, <span>, <strong>, <b>, <em>, <i>, <code>, <input>, <button>, etc.

- The block-level elements should not be placed within inline-level elements

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HTML ATTRIBUTES

- Attributes define additional characteristics or properties of the element such as width and height of an image.
- Attributes are always specified in the start tag (or opening tag) and usually consists of name/value pairs like name="value" . Attribute values should always be enclosed in quotation marks.
- some attributes are required for certain elements, such as src and alt attributes are main attributes for img tag.
- There are several attributes in HTML5 that do not consist of name/value pairs but consists of just name called **BOOLEAN ATTRIBUTES**, such as checked , disabled , readonly , and required.
- Attribute values are generally case-insensitive, except certain attribute values, like the id and class attributes.

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GENERAL PURPOSE ATTRIBUTES

- **GLOBAL ATTRIBUTES:** attributes, such as id, class, title, style that can be used on the majority of HTML elements.

  - **THE ID ATTRIBUTE**: is used to give a unique name or identifier to an element within a document. No two elements in the same document can be named with the same id, and each element can have only one id.

  - **THE CLASS ATTRIBUTE:** is also used to identify elements. But unlike id , the class attribute does not have to be unique in the document. This means that the same class can be applied to multiple elements in a document.

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GENERAL PURPOSE ATTRIBUTES

- **THE TITLE ATTRIBUTE** : is used to provide advisory text about an element or its content. The value of the title attribute (i.e. title text) is displayed as a <u>tooltip</u> by the web browsers <u>when the user place mouse cursor over the element</u>.

- **THE STYLE ATTRIBUTE:** allows you to specify CSS styling rules such as color, font, border, etc. directly within the element.

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HTML HEADINGS

- Headings help in defining the hierarchy and the structure of the web page content.

- HTML offers six levels of heading tags.

- By default, browsers display headings in larger/smaller and bolder font than normal text.

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IMPORTANCE OF HEADINGS

- HTML headings provide valuable information by highlighting important topics and the structure of the document.

- Don't use headings to make your text look BIG or bold. Use them only for highlighting the heading of your document and to show the document structure.

- Since search engines, such as Google, use headings to index the structure and content of the web pages so use them very wisely in your webpage.

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HTML PARAGRAPHS

- Paragraph element is used to publish text on the web pages.

- Paragraphs are defined with the tag <p>.

- Paragraph tag is a very basic and typically the first tag to publish text on the web pages.

- For the purposes of forwards-compatibility and good coding practice, it's advisable to use both the opening and closing tags for the paragraphs. Forgetting the end tag can produce unexpected results or errors.

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LINE BREAKS

- The tag <br> is used to insert a line break on the web page.

- Since the <br> is an empty element, so there is no need of corresponding tag.

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HORIZONTAL RULES

- The tag <hr> can be used to create horizontal rules or lines to visually separate content sections on a web page.

- Like
 , the <hr> tag is also an empty element

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WHITE SPACES

- The browser will display the multiple spaces created inside the HTML code (by pressing the space-bar key or tab key on the keyboard) as a single space.

- Multiple line breaks created inside the HTML code (through pressing the enter key) is also displayed as a single space

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PREFORMATTED TEXT

- use the tag <pre> to display spaces, tabs, line breaks, etc. exactly as written in the HTML file.

- It is very helpful in presenting text where spaces and line breaks are important like poem or code.

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THE END

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